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PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT



To:
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NOTIFICATION OF TRANSMITTAL OF
INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Rule 71.1)

Date of mailing
(day/month/year)

12.10.2004

Applicant's or agent's file reference
CFO17501WO

IMPORTANT NOTIFICATION

International application No.
PCT/JP03 / 10700

International filing date (day/month/year)
25.08.2003

Priority date (day/month/year)
28.08.2002

Applicant

CANON KABUSHIKI KAISHA

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the *PCT Applicant's Guide*.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed invention is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the IPEA/JP

Japan Patent Office

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4H 3036

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference CF017501WO	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/JP 03 / 10700	International filing date (day/month/year) 25.08.2003	Priority date (day/month/year) 28.08.2002	
International Patent Classification (IPC) or national classification and IPC Int.Cl. C07C211/61, 211/54, C09K11/06, H05B33/14			
Applicant CANON KABUSHIKI KAISHA			

1.	This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.
3.	This report is also accompanied by ANNEXES, comprising: <div style="margin-left: 20px;"> a. <input type="checkbox"/> a total of _____ sheets, as follows: <div style="margin-left: 20px;"> <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. </div> </div> <div style="margin-left: 20px;"> b. <input type="checkbox"/> a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions). </div>
4.	This report contains indications relating to the following items: <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application </div>

Date of submission of the demand 29.03.2004	Date of completion of this report 14.09.2004	
Name and mailing address of the IPEA/JP Japan Patent Office 3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan	Authorized officer Yuko KIRA	<div style="border: 1px solid black; padding: 2px; display: inline-block;">4H</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 10px;">3036</div>
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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP 03 / 10700

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

- ☒ the international application as originally filed/furnished
- ☐ the description:
pages _____ as originally filed/furnished
pages* _____ received by this Authority on _____
pages* _____ received by this Authority on _____
- ☐ the claims:
pages _____ as originally filed/furnished
pages* _____ as amended (together with any statement) under Article 19
pages* _____ received by this Authority on _____
pages* _____ received by this Authority on _____
- ☐ the drawings:
pages _____ as originally filed/furnished
pages* _____ received by this Authority on _____
pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to sequence listing (specify): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to sequence listing (specify): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	<u>3 - 7</u>	YES
	Claims	<u>1, 2, 8</u>	NO
Inventive step (IS)	Claims		YES
	Claims	<u>1 - 8</u>	NO
Industrial applicability (IA)	Claims	<u>1 - 8</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)**D1: KAWAI, M. et al.****'Formation of Intramolecular Exciplexes in Electrogenated Chemiluminescence. 2'****THE JOURNAL OF PHYSICAL CHEMISTRY, 1980, Vol.84, No.19, p.2368-2374****D2: JP 2000-273056 A (Idemitsu Kosan Co. Ltd.) 2000.10.03, Claims, [0017]-[0023]****D3: JP 2-190862 A (CANON KABUSHIKI KAISHA) 1990.07.26, Claims, Compound No.1-23****D4: EP 918259 A2 (CANON KABUSHIKI KAISHA) 1999.05.26, [0036]****D5: JP 4-276760 A (HITACHI KASEI KOGYO KABUSHIKI KAISHA) 1992.10.01, Claims****D6: US 5422210 A (Canon Kabushiki Kaisha) 1995.06.06, Column 13-62****D7: JP 11-184108 A (Canon Kabushiki Kaisha) 1999.07.09, Claims, [0019]-[0022]****D8: US 6387545 B1 (Industrial Technology Research Institute) 2002.03.14, Column 2-6, Claims****D9: JP 1-278789 A (AGENCY OF IND SCIENCE & TECHNOL) 1989.11.09, Claims****D10: US 5989737 A (Xerox Corporation) 1999.11.23, Claims, Column 10 No.(21), Column 11 No.(22)****D11: JP 2001-192651 A (FUJI PHOTO FILM CO., LTD) 2001.07.17, Claims****D12: WO 97/33323 A1 (UNIAx CORPORATION) 1997.09.12, Claims****D13: WO 99/40655 A1 (AVENTIS RESEARCH & TECHNOLOGIES GMBH & CO. KG) 1999.08.12, Claims****D14: JP 2002-8866 A (Toray Industries, Inc.) 2002.01.11, Claims, p.7****D15: WO 99/40051 A1 (AVENTTIS RESEARCH & TECHNOLOGIES GMBH & CO. KG) 1999.08.12, Claims****(1) Novelty: Claim 1****Inventive step: Claim 1****The subject matter of claim 1 does not appear to be novel with respect to D1-9.****The subject matter of claim 1 does not appear to involve an inventive step with respect to D1-9.****Claims 1 related to a monoamino compound represented by the general formula [1]****D1-9 disclose monoamino compounds which are regarded to fall within the definition the general formula [1] in the present Claim 1.**

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: V. 2

(2) Novelty: Claims 2,8
Inventive step: Claims 2,8

The subject matter of claims 2,8 does not appear to be novel with respect to D1,2,8,9.
The subject matter of claims 1,2,8 does not appear to involve an inventive step with respect to D1,2,8,9.

Claim 2,8 related to an organic luminescence device using a monoamino compound represented by the general formula [1] in the present Claim 1.

D1,2,8,9 disclose monoamino compounds which are regarded to fall within the definition the general formula [1], and D1,2,8,9 also indicate that above-mentioned monoamino compounds are organic electroluminescent materials.

(3) Inventive Step: Claims 2,8

The subject matter of claims 2,8 does not appear to involve an inventive step with respect to D3-7.

Claim 2,8 related to an organic luminescence device using a monoamino compound represented by the general formula [1] in the present Claim 1.

D3-7 disclose monoamino compounds which is regarded to fall within the definition the general formula [1], and D3-7 also indicate that above-mentioned monoamino compounds are charge-transporting materials

Using a charge-transporting material as an organic electroluminescent material is a common knowledge. Therefore, a person skilled in the art would easily realize the monoamino compounds disclosed in D3-7 are organic electroluminescent materials.

(4) Inventive Step: Claims 3-7

The subject matter of claims 3-7 does not appear to involve an inventive step with respect to D1-15.

D1,2,8,9 disclose tertiary aromatic amines as organic electroluminescent materials.
(see (2))

D3-7 disclose the use of tertiary aromatic amines as charge-transporting materials. As a charge-transporting material can be used as an organic electroluminescent material, a skilled person in the art would apply above-mentioned amines for organic electroluminescent materials. (see (3))

D10-15 disclose that polycyclic aromatic hydrocarbon compounds (D10: the formula (22), D11: the general formula (1), D12: FIG.1A-1G, D13: Example 3-6, D14: page 7, D15: Claims) are electroluminescent materials. In particular, D10 discloses that tertiary aromatic amines are known to facilitate hole injection and hole transport, and polycyclic aromatic hydrocarbon compounds incorporate into a tertiary aromatic amine hole transporting layer.

Therefore, a skilled person in the art would easily conceive the idea of incorporating polycyclic aromatic hydrocarbon compounds disclosed in D10-15 with tertiary aromatic amines disclosed in D1-9.